Never Too Old *for Change*

In recent years, Caltrans has used "innovative delivery" to build transportation projects faster and at lower costs. Innovative delivery is an industry term for nonstandard ways of delivering projects, but often refers to the construction manager/general contractor, also called CMGC, and design-build methods of delivery. Innovative delivery methods will not work for every project, but they are showing promise that they can be effective for appropriately selected projects.

Progress So Far

Caltrans has long relied on design-bid-build delivery. Its manuals and processes speak mostly to that method. So Caltrans has provided innovative delivery training, created new processes where needed, and used existing processes where possible. Caltrans has begun to achieve what it set out to do for the design-build program, which was to capture innovation and speed delivery of projects. Early projects, however, were not delivered faster. Later projects appear to be faring better. Caltrans will continue to evaluate these innovative delivery techniques to determine where and when these tools are best used.

Why Innovative Delivery?

Projects using innovative delivery methods are funded the same way as any other Caltrans project, through the State Highway Operation and Protection Program, the State Transportation Improvement Program, or with local funds. Innovative delivery methods can bring new ideas and new processes to a project, allow a project to be delivered faster, lessen the risks associated with the project, transfer appropriate risks to the contractor, and help avoid cost overruns.

Design-Build and CMGC

Under Caltrans' standard design-bid-build method, the department is responsible for 100 percent of the design. Once the plans, specifications and estimates are complete, the project is advertised and contractors make their bids. The lowest responsible bidder is awarded the contract and builds the project.

With the design-build delivery method, a contract for both final design and construction is awarded to a single entity. In 2009, the California Legislature authorized Caltrans to use design-build on as many as 10 transportation projects. Caltrans is wrapping up that first set of design-build projects, and the Legislature has authorized as many as 10 more in the next decade. The department will assess what worked on the first set of design-build projects and what did not work and apply what it learned to the next set of projects.

The CMGC delivery method allows Caltrans to engage a construction manager during the design process to garner their construction expertise to develop a more efficient design. At an agreed upon point, Caltrans and the construction manager negotiate a price to construct the project, and the construction manager becomes the general contractor.

Caltrans selected six projects for the new CMGC pilot delivery method:

- The *Ferguson Slide Restoration project* will reopen and restore full access to a slide-damaged section of State Route 140, eliminating detours and giving travelers a direct route to Yosemite National Park and other destinations along SR-140. Construction began in March 2015.
- Caltrans has awarded the project and plans to start construction in December 2015 on a realignment of State Route 99 in Fresno County to accommodate high-speed rail.
- A contract to remove the foundations of the old San Francisco–Oakland Bay Bridge was awarded in August 2014, and Caltrans is working with the construction manager to design the demolition strategy. The first construction contract for this project was awarded in April 2015, and construction began the next month.
- A project to add 14 miles of carpool lanes on Interstate 5 in San Diego will also improve transit and restore a coastal lagoon.
- The fifth project will reconstruct the Barton Road Interchange on Interstate 215 in San Bernardino County.
- Caltrans has selected the construction manager for the sixth and final project to widen State Route 58 in San Bernardino County from a two-lane conventional highway to a four-lane expressway.

Savings to Date

Design-build has achieved both time and cost savings. The earlier projects did not achieve the anticipated savings due to the time it took to start the program. The later projects, however, have achieved significant time savings, such as projects awarded up to 27 months earlier and the potential for completing projects up to 11 months earlier using design-build. Cost savings to date have been primarily due to innovation using alternative technical concepts. Alternative technical concepts are proposed changes to Caltrans' supplied basic configurations, design criteria, or construction criteria that provide a solution that is equal to or better than the requirements in the request for proposals. Caltrans achieved an average cost savings of 13.8 percent, or $142 million, through innovative ideas proposed during the procurement of the design-build projects.

For CMGC, it is too early to tell whether Caltrans will achieve time or cost savings, or both. The department will not know definitively until the projects are complete, although, it does appear that Caltrans is on track to achieve savings in both time and costs.

The design-build and CMGC delivery programs have helped Caltrans learn how to use these methods and on which projects. Having more options in its project delivery toolbox helps Caltrans match the strengths and weaknesses of each option with appropriate projects. Pilot project delivery methods like CMGC allow Caltrans to tap into the talents of its contractors and strengthen its partnerships. As the projects are completed, Caltrans will need to continue to collect best practices and incorporate those practices into future projects.

Source: Division of Design